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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner : ~~Not yet assigned~~ *FOX*

Group : ~~Not yet assigned~~ *1638*

Applicants : Jens Kossmann et al.

Application No. : ~~Not yet assigned~~ *09/850,991*

Filed : ~~Concurrently herewith~~ *5/8/01*

For : NUCLEIC ACID MOLECULES CODING FOR DEBRANCHING ENZYMES FROM MAIZE

New York, New York
May 8, 2001

Hon. Commissioner for Patents
Washington, D.C. 20231

STATEMENT UNDER 37 C.F.R. §§ 1.56 AND 1.97

Sir:

Pursuant to 37 C.F.R. §§ 1.56 and 1.97, applicants make of record the following documents*:

UNITED STATES PATENT DOCUMENTS

<u>Applicant</u>	<u>Patent No.</u>	<u>Issue Date</u>
Okada et al.	4,454,161	June 12, 1984
Kossmann et al.	6,001,628	December 14, 1999
Willmitzer et al.	6,057,493	May 2, 2000
Kossmann et al.	6,066,782	May 23, 2000
Kossmann et al.	6,117,665	September 12, 2000

* A completed Form PTO-1449 listing these documents is attached hereto.

FOREIGN PATENT DOCUMENTS

<u>Publication No.</u>	<u>Publication Date</u>
EP 0 479 359 A1	April 8, 1992
EP 0 529 894 A1	March 3, 1993
EP 0 554 122 A1	August 4, 1993
WO 92/11376	July 9, 1992
WO 92/11382	July 9, 1992
WO 92/14827	September 3, 1992
WO 95/04826	February 16, 1995
WO 95/09922	April 13, 1995
WO 96/03513	February 8, 1996
WO 96/19581	June 27, 1996
AU-B-19028/95	October 17, 1995

OTHER DOCUMENTS

Black, R.C. et al, "Genetic Interactions Affecting Maize Phytoglycogen and the Phytoglycogen-Forming Branching Enzymes," Genetics, 53, pp. 661-668 (1966).

Doehlert, D.C. et al., "Two Classes of Starch Debranching Enzymes From Developing Maize Kernels," J. Plant Physiol., 138, pp. 566-572 (1991).

Hannah, L.C. et al., "Biotechnological Modification of Carbohydrates for Sweet Corn and Maize Improvement," Scientia Horticulturae, 55, pp. 177-197 (1993).

Hawker, J.S. et al., "Interaction of Spinach Leaf Adenosine Diphosphate Glucose α -1,4-Glucan α -4-Glucosyl Transferase and α -1,4-Glucan, α -1,4-Glucan-6-Glycosyl Transferase in Synthesis of Branched α -Glucan," Archives of Biochemistry and Biophysics, 160, pp. 530-551 (1974).

Hobson, P.N. et al., "The Enzymic Synthesis and Degradation of Starch - Part XIV - R-Enzyme," Journal of the Chemical Society, pp. 1451-1459 (1951).

Ishizaki, Y. et al., "Debranching Enzymes of Potato Tubers (*Solanum tuberosum* L.). I. Purification and Some Properties of Potato Isoamylase," Agric. Biol. Chem., 47, pp. 771-779 (1983).

James, M.G. et al., "Characterization of the Maize Gene *Sugary1*, a Determinant of Starch Composition in Kernels," The Plant Cell, 7, pp. 417-429 (1995).

Katsuragi, N. et al., "Entire Nucleotide Sequence of the Pullulanase Gene of *Klebsiella aerogenes* W70," Journal of Bacteriology, 169, pp. 2301-2306 (1987).

Kossmann et al., "Transgenic Plants as a Tool to Understand Starch Biosynthesis," Progress Biotechnol., 10, pp. 271-278 (1995).

Li, B. et al., "Characterization and Subcellular Localization of Debranching Enzyme and Endoamylase from Leaves of Sugar Beet," Plant Physiology, 98, pp. 1277-1284 (1992).

Ludwig, I. et al., "Purification and Properties of Spinach Leaf Debranching Enzyme," Plant Physiology, 74, pp. 856-861 (1984).

Manners, D.J. et al., "Studies on Carbohydrate-Metabolising Enzymes: Part XX Sweet-Corn Debranching Enzymes," Carbohydr. Res., 9, pp. 107-121 (1969).

Nakamura, Y. et al., "Rice mRNA for Starch Debranching Enzyme (R-Enzyme), Complete cds," EMBL Sequence Database, Acc. No. D50602, Release 43 (1995).

Pan, D. et al., "A Debranching Enzyme Deficiency in Endosperms of the *Sugary1* Mutants of Maize," Plant Physiol., 74, pp. 324-328 (1984).

Renz, A. et al., "S. oleracea L. mRNA for Pullulanase," EMBL Sequence Database, Acc. No. X83969, Release 42 (1995).

Schaller, A., "The Electronic Plant Gene Register," Plant Physiology, 108, pp. 1341-1343 (1995).

Shannon, J.C. et al., "Genetics and Physiology of Starch Development," Starch: Chemistry and Technology, 2d Ed., Academic Press, pp. 25-86 (1984).

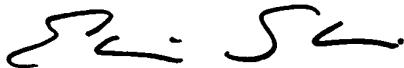
Shen, B. et al., "6c06d08-t7 Etiolated Seedling *Zea mays* cDNA Clone 6c06d08 5' End," EMBL Sequence Database, Acc. No. T15335, Release 38 (1994).

Visser, R.G.F. et al., "Inhibition of the expression of the gene for granule-bound starch synthase in potato by antisense constructs," Mol. Gen. Genet., 225, pp. 289-296 (1991).

Applicants request that the cited documents be (1) fully considered by the Examiner during the course of examination of this application, and (2) printed on any patent issuing from this application. Applicants further request that a copy of form PTO-1449, as considered and initialed by the Examiner, be returned with the next communication.

In addition, applicants make of record pending United States patent application 09/573,629 (Kossmann et al.), filed May 17, 2000, which shares an inventor with the present invention. A copy of this application is enclosed.

Respectfully submitted,



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